

ORIGINS TECHNOLOGY SUMMARY

REQUIRED CAPABILITY		PERFORMANCE GOALS					TECHNOLOGY OPTIONS			
DESCRIPTION	PRIORITY	METRICS	UNITS	SIM	NGST	TPFA	DESCRIPTION	SOA	LIMIT	DEMO?
Precision Deployable Structures	High	deployment accuracy	mm	5	0.5	5	Extendible Booms <ul style="list-style-type: none"> joint dominated structure susceptible to microdynamics very large structures high part count <div> deployment accuracy3 mm stability over temperature3mm microdynamic stabilityTBD nm scale of deployment12 m operating temperatureTBDK deployment temperatureTBDK packaging efficiency5% deployed frequencydepends on size and form factor masslow </div>			flight
		stability over temperature	mm	5	0.5	5			0.3 mm	
		microdynamic stability	nm	1*	100	1*			0.3mm	
		scale of deployment	m	10	8	75			TBD nm	
		operating temperature	K	280	40	35			150 m ??	
		deployment temperature	K	280	TBD	TBD			TBD	
		packaging efficiency	%	TBD	TBD	TBD			TBD	
		deployed frequency	Hz	5	5	0.5			TBD	
		mass	kg/sq.m	low	5-7	<10			5%	
		* function of frequency:	1 nm > 100 Hz				Fold-out Booms <ul style="list-style-type: none"> microdynamics concentrated in latch smaller structures than extendible low part count <div> deployment accuracy3 mm stability over temperature3mm microdynamic stabilityTBD nm scale of deployment10 m operating temperatureTBDK deployment temperatureTBDK packaging efficiency100% deployed frequencydepends as above masslow </div>			flight flight
			100 nm @ 10 Hz							
			10 um @ 1 Hz							
							Areal Structures <ul style="list-style-type: none"> back-up structures approach to packaging latches approach to unfolding <div> deployment accuracy3 mm stability over temperature3mm microdynamic stabilityTBD nm scale of deploymentnone flown operating temperatureTBDK deployment temperatureTBDK packaging efficiency100% deployed frequencydepends as above massTBD </div>			

Precision Deployment 1